Amendments to the Claims

This listing will replace all prior versions and listings of claims in the application:

Listing of Claims

Claims 1-40 (canceled)

41. (new) An interconnect structure comprising:

a substrate;

a conductive material disposed on said substrate;

a porous or dense low k dielectric layer disposed on said conductive material, wherein said low k dielectric layer has a single or dual damascene etched openings that expose a surface of said conductive material; and

metallic lines and vias etched onto said low k dielectric layer;

wherein said exposed surface of said conductive material in said etched openings has been treated with a condensable cleaning agent (CAA) and activated at a temperature about -200 °C to about 25 °C to remove oxide, oxygen and carbon containing residues from said surface of said conductive material.

42. (new) The interconnect structure of Claim 41, further comprising a liner material lining said metallic lines and vias.

43. (new) The interconnect structure of Claim 42, wherein said liner material is selected from the group consisting of: TiN, TaN, Ta, WN, W, TaSiN, TiSiN, WCN, Ru and a mixture thereof.

44. (new) The interconnect structure of Claim 41, wherein said porous or dense low k dielectric is selected from the group consisting of:

silicon-containing material formed from one or more of Si, C, O, F and H, PE CVD materials having a composition Si, C, O, and H, a fluorosilicate glass (FSG), C doped oxide, F doped oxide and alloys of Si, C, O and H .

45. (new) The interconnect structure of Claim 41, wherein said interconnect structure is placed in a first process chamber on a cold chuck to condense a layer of condensable cleaning agent within said etched openings on said substrate and thereafter activated in a second process chamber on a cluster tool.

46. (new) The interconnect structure of Claim 41, wherein said metallic lines and vias are filled with Cu.

47. (new) The interconnect structure of Claim 41, wherein said conductive material disposed on said substrate is selected from the group consisting of: W, Cu, Al, Ag, Au and alloys thereof.

48. (new) The interconnect structure of Claim 47, wherein said conductive material is Cu.